THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte DAE S. JEON and DU H. CHUN

_____

Appeal No. 96-0974
Application 08/024,299[1]

_____

HEARD: January 12, 1999

_____

Before HAIRSTON, KRASS, and MARTIN, Administrative Patent Judges.

MARTIN, Administrative Patent Judge.

_____

[1] Application for patent filed March 1, 1993. Appellants claim the benefit under 35 U.S.C. § 119 of the following application:

Republic of Korea	92-3396	February 29, 1992

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1, 2 and 5-8 under 35 U.S.C. § 102 and rejection of claims 3 and 4 under § 103. No claims stand allowed. We reverse both rejections.

The invention concerns detection of a broken line in a multi-line cable and switching the transmission of data from the broken line to an unused extra line. Claim 1, which is representative, reads as follows:

> 1. An automatic broken cable detecting and switching apparatus, comprising:
>
> means for discovering the presence of a defective line of a cable having a plurality of lines during a power-on period by sequentially checking each of said lines;
>
> warning display means for displaying an identification of the defective line upon said discovery;
>
> line selecting means for automatically switching transmission of data from said defective line to another line;
>
> means for again checking the presence of a defect in other lines of the cable after switching said defective line to said another line; and
>
> means for automatically resuming transmission of data upon completion of the checking.

The references relied on by the examiner are:

Kohno	5,153,874	October 6, 1992
Lebby et al. (Lebby)	5,218,465	June 8, 1993

Claims 1, 2 and 5-8 stand rejected under § 102 as anticipated by Kohno. Claims 5-8 stand rejected under § 103 as unpatentable for obviousness over Kohno in view of Lebby.

Claims 1 and 32 are argued as a first group, claims 3 and 4 as a second group, and claims 5-8 as a third group.[2]

Anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference. In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). Kohno discloses a redundancy data transmission device which employs redundant transmission lines A and B which connect a plurality of stations (S1 and S2 in Fig. 1) (col. 2, lines 37-40). Figure 3 shows system having five stations S1 to S5 connected by transmission lines A and B. The signals transmitted between stations over lines A and B have the format shown in Figure 2, including a destination

[2] Brief at 9.

address DA, a sender address SA, an information portion, and an error detection portion EC (col. 1, lines 61-65; col. 2, lines 43-49). During transmission, the transmitting station (e.g., S1) simultaneously applies the transmitted signal to both transmission lines via transmission drivers 2a and 2b (col. 2, lines 43-46). At the receiving station, the signals received on lines A and B are coupled via receiving drivers 3a and 3b, respectively, to
input terminals of a changeover switch 4 for selectively connecting one or the other of the received transmission line signals to the input of receiving circuit 5 (col. 2, lines 50-55). The state of the switch is controlled by a transmission line check circuit 6, sender address detection circuits 8a and 8b, and abnormality check circuit 9 (col. 2, lines 58-68). These circuits determine whether the transmission lines are normal or abnormal and the results of this analysis are fed to CPU 10, which operates changeover switch 4, if necessary, to connect a normal signal to the input of receiving circuit 5 (col. 3, lines 1-12). The CPU includes a display control circuit 11 through which the check

result of the abnormality check circuit 9 is displayed on a display such as a cathode ray tube (col. 3, lines 9-12).

The examiner contends[3] that claim 1's recitation of "line selecting means for automatically switching transmission of data from said defective line to another line" (our emphasis) is satisfied by the Kohno reference, citing the following passage from column 1, lines 22-27 of the reference: "When the decision means determines the existence of abnormality of received data transmitted through a certain transmission line, the receiver switches the transmission line from the line related to abnormal data, to another by means of s changeover switch" (our emphasis). We agree with appellants (Brief at 13) that the claim language at issue requires the switching to occur upstream of the transmission path, not downstream as in Kohno. As a result, Kohno fails to anticipate claim 1. We note that at page 5 of the final Office action,[4] the examiner made the following argument with respect to this limitation: "Applicant also points out that Kohno switches the receiving

[3] Answer at 5.

[4] Paper No. 8.

end of the line instead of the transmitting end, as applicant does. . . . [T]his aspect hardly adds [a] significant distinction, if any at all." As appellants correctly note, to be anticipatory, a reference must satisfy every limitation of a claim, whether or not the examiner considers it to be "significant." Furthermore, the assertion that the limitation fails to add a "significant" distinction over Kohno sounds like an argument for nonobviousness under § 103, which is out of place in a rejection for anticipation under § 102.

We also agree with appellants that the rejection of claim 1 for anticipation by Kohno is unsustainable for a number of other reasons. Claim 1 recites "means for discovering the presence of a defective line of a cable having a plurality of lines during a power on period by sequentially checking each of said lines" (our emphasis). The Answer addresses this limitation as follows (at 6):[5]

> Appellant argues that [Kohno] does not mention a power-on mode of operation. If Kohno does not operate in the power-on mode, where does he operate, in the power-off mode? If

[5] Answer at 6.

> applicant is suggesting that, as claimed, the test is performed during a "power-on period," this makes more sense than a power-on mode, as argued. Kohno still meets this limitation. [Our emphasis.]

The Answer does not explain how Kohno meets this limitation.

The final Office action explains:

> Kohno specifically discloses identifying abnormal lines included in a plurality of transmission lines. He does not specifically mention performing this check during power on[;] however, the system disclosed by Kohno gives no particular time period within which this check takes place. No particular weight can be given to the fact that applicant performs his check at power on. It would make sense that any check for circuit abnormalities would be scheduled prior to any normal operations.

As noted above, this type of reasoning is inappropriate in a rejection for anticipation, which requires that the reference expressly or inherently disclose every limitation of the claim.

Appellants also correctly note that the examiner failed to address the last two elements of claim 1, i.e., the "means for again checking the presence of a defect in other lines of the cable after switching said defective line to said another line" and the "means for automatically resuming transmission of data upon completion of the checking." It is not apparent

to us why the examiner believes these limitations are satisfied by Kohno.

Finally, appellants argue[6] that the examiner failed to comply with the requirements of § 112, ¶ 6 and In re Donaldson Co., 16 F.3d 1189, 1194-95, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) (in banc), because he did not compare each of appellants' means-plus-function elements with the disclosed structure in Kohno which he believes is identical or equivalent to appellants' disclosed structure for performing those functions. Specifically, appellants complain that the examiner, rather than reading their claimed "means for discovering" and "line selection means" on the apparatus shown in Kohno's drawing and described in his specification, read them on the "switch means" and "check means" recited in Kohno's claim 1 (col. 4, lines 24-27). According to appellants, the examiner was required to construe Kohno's means-plus-function claim limitations in accordance with the provisions of § 112, ¶ 6 in order to determine whether those limitations anticipate the means-plus-function limitations of

[6] Brief at 15-18.

appellants' claims, citing Donaldson, 16 F.3d at 1194-95, 29 USPQ2d at 1850. We do not agree that Donaldson contemplates applying 112, ¶ 6 to means-plus-function claim limitations in a reference patent. However, we do agree with appellants' argument[7] that the examiner was required to compare their means-plus-function limitations, as construed in accordance with § 112, ¶ 6, with Kohno's disclosed structure rather than with Kohno's claims in order to determine whether Kohno's disclosed structure is identical to or equivalent to appellants' disclosed structure for performing the recited functions. More particularly, the examiner has the initial burden of (1) determining whether the claims expressly or implicitly include a means-plus-function or step-plus-function limitation of the type governed by the provisions of § 112, ¶ 6 and (2) if the answer is yes, determining whether the structure, material, or acts disclosed in the reference as performing the recited function is or are identical to or equivalent to the structure, material, or acts disclosed by appellants for performing that function. See Examination

[7] Brief at 16.

Guidelines For Claims Reciting A ["]Means or Step Plus Function Limitation In Accordance With 35 U.S.C. § 112, 6th Paragraph, 1162 Off. Gaz. Pat. & Trademark Office 59, 59-60 (May 17, 1994) (hereinafter PTO Guidelines):[8]

> **I. Identifying a § 112, 6th paragraph limitation**
>
> Although there is no magic language that must appear in a claim in order for it to fall within the scope of § 112, 6th paragraph, it must be clear that the element in the claim is set forth, at least in part, by the function it performs as opposed to the specific structure, material, or acts that perform the function. . . .
> . . . .
>
> **II. Examining procedure**
> . . . .
>
> **B. Making a prima facie case of equivalence**
>
> If the examiner finds that a prior art element performs the function specified in the claim, and is not excluded by any explicit definition provided in the specification for an equivalent, the examiner should infer from that finding that the prior art element is an equivalent, and should then conclude that the claimed limitation is anticipated by the prior art element. The burden then shifts to the applicant [Footnote 9: "No further analysis of equivalents is required of the examiner until applicant disagrees with the examiner's

[8] These guidelines also appear in MPEP §§ 2181-84 (Rev. 3, 1997).

> conclusion, and provides reasons why the prior art element should not be considered an equivalent.") to show that the element shown in the prior art in not an equivalent of the structure, material or acts disclosed in the application. In re Mulder, 716 F.2d 1542, 219 USPQ 189 (Fed. Cir. 1983). [Footnote 10 omitted.]

The closest the examiner comes to addressing the § 112, ¶ 6 issue in the Answer (at 6), wherein he states that Kohno's claimed "check means" and "switch means" are "fairly good substitutes" for appellants' claimed "discovery means" and "line selecting means." This statement is both belated and insufficient to satisfy the examiner's initial burden of proof under § 112, ¶ 6 and the PTO Guidelines to explain which of the means-plus-function limitations, if any, are subject to the provisions of § 112, ¶ 6 and, with respect to such limitations, to identify the reference structure that the examiner believes is identical to or equivalent to appellants' disclosed structure for performing the recited function.

For all of the foregoing reasons, we are unable to sustain the rejection of claim 1 or the rejection of claim 3, which stands or falls (in this case stands) therewith.

Method claims 5-8, like apparatus claims 1 and 2, stand rejected for anticipation by Kohno. Claim 5 recites inter alia "transmitting test signals by said transmitting processor to the addresses of a designated line." The examiner argues that Kohno satisfies this limitation because his transmission signal has a frame construction including a destination address DA, citing column 2, lines 47-48. Appellants correctly note that the destination address is the address of another station, not the address of a transmitting line, as required by the claim. Kohno also fails to disclose the step of "initializing the apparatus for designating start addresses of a main line in use and start addresses of an extra line not in use, clearing a line count and an abnormal line count to '0', and setting a total number of the lines corresponding to a final line count."

Appellants also correctly note that the examiner failed to satisfy his initial burden under § 112, ¶ 6 and the PTO Guidelines with respect to the step limitations of claims 5-8. However, we do not agree with appellants' argument[9] that

[9] Brief at 23.

"since claim 5 specifically recites steps for increasing said line count and comparing the current line count with the line count set at said initializing step, a prima facie case of anticipation must address the structure [in Kohno for] performing these acts and set forth [a] rationale for asserting how the alleged equivalent structure disclosed by the reference performs these acts" (our emphasis). This argument appears to confuse "acts," which are not subject to interpretation under § 112, ¶ 6, with "functions," which are. See O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583, 42 USPQ2d 1777, 1782 (Fed. Cir. 1997) (§ 112, ¶ 6 is implicated with respect to method claims "only when steps plus function without acts are present." (Emphasis in original.)

For the foregoing reasons, the § 102 rejection of claim 5 is therefore reversed, as is the § 102 rejection of claims 6-8, which stand or fall (in this case fall) therewith.

Apparatus claim 3, which recites each of the elements depicted in appellants' Figure 1, and its dependent claim 4, stand rejected for obviousness over Kohno in view of Lebby, which discloses an "intelligent interconnect" utilizing optical links (col. 1, lines 5-7). Referring to Lebby's sole

figure, the intelligent interconnect 10 includes a transmitting data processing terminal 15 connected to receiving data processing terminal 20 by an optical channel 12 (e.g., optical fibers) and an operation monitoring channel 14 (e.g., an RF link) (col. 2, line 49 to col. 3, line 1). Transmitting terminal 15 includes electrical to optical transducers 22 and optical to electrical transducers 24 (col. 3, lines 2-10). Optical channel 12 includes a plurality of predetermined optical paths that are normally used for the transmission of data and one or more redundant optical paths to be used in the event one or mor of the predetermined optical paths fails (col. 3, lines 53-57). Input data is formatted by formatting circuitry 27 and applied to cross connect apparatus 35, which is controllable by microprocessor 37 to switch any one of the data input lines from the normal selected optical path to a redundant path (col. 3, lines 15-17 and col. 3, line 50 to col. 4, line 6). Microprocessor 37 is responsive to diagnostic and failure detection circuit, which is connected to transducers 22 so as to detect a failure in any of the optical paths (col. 4, lines 6-11). Circuit 40 may also or alternatively be connected to transducers 24 so as to

receive control signals (flags) from the operation monitoring channel 14 (col. 4, lines 11-14). As is apparent from the figure, the receiving processing terminal 20 includes similar fault detection and rerouting circuitry.

The examiner, after asserting that "Kohno teaches the use of a multi-core cable" but "does not teach the remaining elements of this claim, reads appellant's claimed "transmitting data processing means" on the "transmitting data processing terminal at the first termination point" recited in Lebby's claim 1 (at col. 5, line 61), reads appellants' claimed "receiving microprocessor" on the "receiving, data processing terminal at the second termination point" recited in Lebby's claim 1 (at col. 5, line 38), and reads appellants' claimed "transmitting demultiplexer" and "receiving multiplexer" on the "controllable connecting circuitry" recited in Libby's claim 1 (at col. 6, lines 13-22). The examiner concludes the rejection by stating:

> It would have been obvious to anyone having ordinary skill in the art at the time the invention was made to have included the features displayed by Lebby et al. in the system disclosed by Kohno since the microprocessor based data processing equipment affords flexibility and speed to the transmission and

> switching capabilities of the system as well as facilitating system modifications." [Answer at 4-5.]

As appellants correctly note, Kohno does not actually teach a multi-core cable, as required by claim 3. Instead, Kohno describes transmission paths A and B as "transmission lines" (e.g., col. 2, lines 39-40). Kohno does not indicate that these lines may be included in a single cable. The examiner has not asserted that or explained why it would have been obvious to house both of Kohno's transmission lines in a single cable.

Nor has the examiner adequately demonstrated the requisite motivation for combining the disparate teachings of Kohno and Lebby. As appellants correctly note, Kohno's and Lebby's transmission and fault correction techniques cannot be combined because they are incompatible with each other. Whereas Kohno simultaneously transmits data over all (i.e., both) available transmission paths A and B and selects the data from normal path at the receiving end, Lebby transmits data over fewer than all of the available transmission paths and replaces a faulty path with an unused path at the transmitting end. As a result, modifying Kohno in view of

Lebby would appear to have the effect of rendering Kohno unsuitable for operation in the intended manner. Compare In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) ("if the French apparatus were turned upside down, it would be rendered inoperable for its intended purpose"); In re Schulpen, 390 F.2d 1009, 1013, 157 USPQ 52, 55 (CCPA 1968) ("Rather than being made obvious by the reference, such modification would run counter to its teaching by rendering the apparatus inoperative to produce the disclosed tire patches.").

Furthermore, assuming arguendo that it would have been obvious to combine the teaching so these references, the rejection fails for failing to adequately explain how the reference teachings are to be combined and how the limitations of claim 5 can be read on the result, because the examiner has addressed only five of the claim 3's twelve limitations.

Finally, for the same reasons as given above with respect to claim 1, we agree with appellants[10] that the examiner, by reading appellants' claim 3 on Lebby's claim 1 instead of on

[10] Brief at 26.

Lebby's disclosed apparatus, failed to satisfy his initial burden of proof under § 112, ¶ 6 and the PTO Guidelines with respect to appellants' means-plus-function claim limitations.

For the foregoing reasons, the rejection of claim 3 is reversed, as is the rejection of claim 4, which stands or falls (in this case falls) therewith.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)
ERROL A. KRASS Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
JOHN C. MARTIN Administrative Patent Judge	)

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